16153 1A

ORIGINAL (Red)

BLANK, ROME, COMISKY & McCAULEY
FOUR PENN CENTER PLAZA
PHILADELPHIA, PENNSYLVANIA 19103
215-569-5500
TWX 710-670-1073 · BLARCOM
TELECOPIER 215-564-5399

1400 NORTH PROVIDENCE ROAD
MEDIA, PA 19063
215-891-7800

210 LAKE DRIVE EAST
CHERRY HILL, NJ 08002
609-779-3600

1401 FORUM WAY
WEST PALM BEACH, FLORIDA 33401
305-686-8100

DIRECT DIAL NUMBER:

July 30, 1987

RECEIVED
JUL 31 1987
EPA, REGION III
OFFICE OF REGIONAL COUNSEL

Lawrence Falkin
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, PA 19107

Re: **Eastern Diversified Metals Site**

Dear Larry:

Enclosed is a copy of an evaluation report (including a blueprint map) prepared by Todd Giddings and Associates with respect to the equalization basin (lagoon; surface impoundment) at the Eastern Diversified Metals Site. This is the follow-up document referenced in Ben Stonelake's June 29, 1987 letter regarding Theodore Sall, Inc.'s position on the emergency actions proposed by EPA.

The evaluation performed by Todd Giddings makes it clear that the equalization basin is adequately constructed to withstand hydraulic overloads; the report also concludes that the erosion protection system is intact.

Based on the Todd Giddings report, the site owner reiterates its position that there is no need to further evaluate this one element of the collection system, especially independently of an RI/FS. Sall is concerned that such an effort would not only be wasteful, but would seriously damage the system. Therefore, if EPA were to perform such an evaluation and/or tamper with the collection system, Theodore Sall, Inc. may elect to oppose EPA's access to the Site.

Very truly yours,

Heather C. Winett
HEATHER C. WINETT

HCW/kw
HC3:R
cc: Bruce Smith (EPA)
Richard Beldner, Esquire (w/out map)
Leo Paradoski (w/out map)
John S. Williams, AT&T Nassau Metals (w/out map)
Michael W. Steinberg, Counsel for AT&T Nassau Metals (w/out map)

TODD GIDDINGS and ASSOCIATES, INC.
HYDROGEOLOGISTS and ENGINEERS

3049 Enterprise Drive — State College, PA 16801 — Phone (814) 238-5927

ORIGINAL (illegible)

MEMORANDUM

To: File

Date: July 29, 1987

From: Kerry KDT Tyson, P.E.

Re: Hometown (T. Sall) Equalization Lagoon Evaluation

Following is a report of the above-referenced lagoon showing its effectiveness in containing run-off from rainfall events. This report was made pursuant to a request by Blank, Rome, Comisky & McCauley for submission to the U.S. Environmental Protection Agency. A stamped blueprint showing the lagoon within the context of the waste treatment system and detailing the construction of the spillway is attached.

Based on an evaluation of the information found in the files and field studies, the characteristics of the lagoon are:

1. Construction: excavated and embanked soil, 30 mil PVC liner

2. Shape: trapezoidal; 1:3 side slopes; 9 ft. total depth to spillway discharge.

3. Capacity: 378,020 gallons at 6 ft. depth; 695,090 gallons at 9 ft. depth (max.)

4. Calculated Drainage Area: 7.56 Acres

5. Design Run-off: ". . . The basin has been designed to hold the total run-off for the 7 acre area, assuming a 2-inch rainfall. Normal depth of the pond will be 6 ft., but the 3 ft. freeboard allowed will provide additional capacity in emergencies to allow the storage of rainfall exceeding 3-inches over the 7 acre area" (Soil Erosion and Sedimentation Plan, Eastern Diversified Metals Corp., Water Quality Application No. 5474203, 1974).

6. Emergency Spillway: Trapezoidal, 10 ft. bottom width; 14 ft. top width; 1:2 side slopes; 1 ft. depth; discharges at depths exceeding 9 ft.; 20% slope, asphalt pavement lined.

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Evaluation of Design Run-off

Based on the calculation method described below, the estimated run-off from a 10 year, 24 hr. storm (4.7 inches) would be 2.34 inches over the 7.56 acre drainage area or 480, 401 gallons, well within the capacity of the basin, provided the basin continues to be kept no more than half full.

According to the United States Soil Conservation Service (SCS), the 10 year, 24 hour rainfall event for Schuylkill County is 4.7 inches. Thus, the rainfall from a 10 year, 24 hour storm (a standard erosion and sedimentation control design criterion) was utilized for the evaluation. Based on the current drainage area being 7.56 acres and Schuylkill County's 10 year, 24 hour rainfall event, the run-off from such was calculated utilizing methods outlined in the SCS publication "Urban Hydrology for Small Watersheds", 2nd Edition, June 1986 (see Attachment A). Because the SCS does not have a specific category covering plastic waste, it was treated for run-off purposes as bare soil with a sand, loamy sand, or sandy loam (class A) texture. This may have been an overly conservative approximation, given the permeable nature of the waste material, but it does provide an excellent safety factor.

Evaluation of Emergency Spillway

The emergency spillway is an integral and vital part of the lagoon design. The purpose of the emergency spillway is to provide an efficient and safe means of the conveying discharges in excess of the holding capacity of the lagoon past the structure to a downstream location. Normal discharges are handled through the regular outlet structure, so the spillway may be rarely utilized. However, it is important that the sporadic occurrence of an excessive discharge not be allowed to destroy the lagoon structure, so a large capacity spillway is a vital and regular design feature. The existing emergency spillway was permitted by the Pennsylvania Dept. of Environmental Resources in the 1974 Water Quality Permit Application. Obviously, the spillway should not be misconceived as an erosion channel in the wastewater treatment system.

The lagoon level is controlled by the valved discharge to the wastewater treatment works. While the wastewater plant was designed for an average and maximum flow of 43,000 gpd (30 gpm) and 108,000 gpd (70 gpm) respectively, currently, best treatment efficiencies are found in the 7200 gpd (5 gpm) to 14400 gpd (10 gpm) range. Also, according to the operator, the plant can run at average or maximum flows for several days with no problems anticipated. Therefore, as the lagoon level begins to rise due to wet weather conditions, the outflow is increased accordingly.

Assuming a 20% capacity loss due to sediment accumulation (139,018 gallons or a 2.8 foot sediment accumulation), the lagoon (empty) has an effective volume of 556,070 gallons. Under worst case conditions, with a 10 year, 24 hr. influent of 480,041 gallons, and a maximum outflow of 108,000 gallons, the lagoon has approximately 184,000 gallons, (or approximately 2.6 feet above the sediment) of capacity

remaining. Therefore, if the operator maintains a maximum lagoon level of five (5) feet (from the original bottom) or less at all times, leaving a minimum available storage volume of 402,020 gallons, the 10 year, 24 hr. storm can be handled with no spillway discharge, leaving approximately 29,000 gallons of storage capacity remaining.

Since December, 1977, there have been only two occasions when the lagoon (basin) overflowed via the emergency spillway.

1. Summer 1979 or 1980: Following a two week period of rainy weather, which left the lagoon level high, an extremely heavy storm created bypass conditions via the spillway.

2. April 5-6, 1984: The combination of rapid 12-inch snowpack melt plus 2.5 inches of rain over 36 hours created a minor spillway overflow (see Attachment B). Prior to the snowpack melt, the lagoon had been 3/4 full and frozen over.

In both cases, the lagoon had a high water level prior to the overflow event. Since this overflow defeated the purpose of an equalization lagoon, leaving limited storage capacity, additional emergency planning procedures were developed for the operation of the lagoon. Since April 1984 it has been operational practice to keep the lagoon level as low as possible at all times, no more than half full.

Based on information collected from the file data, the spillway has been calculated for a total capacity of 470 cubic feet per second (210,964 gpm). Upon consulting the SCS "Urban Hydrology for Small Watersheds", 1st Edition, 1975, a method was obtained to approximate peak discharge from a 10 year, 24 hour storm for the watershed. (While this method has been replaced with a more detailed method in the previously referenced 2nd edition, all the data cannot be obtained, due to the plastic component, to accurately utilize the updated method. According to the SCS, the 1st edition provides an overall rough approximation, which in this case should be sufficient for an initial spillway size evaluation.) This peak discharge is approximately 36 CFS. (16,160 gpm). Therefore, the emergency spillway capacity is more than sufficient.

Conclusion

Overall, based upon the file data available field investigations, and information provided by the operator, it appears that the present equalization lagoon and spillway are functional and adequate to handle the run-off from a 10 year, 24 hr. storm, provided the operator continues to implement and maintain the previously discussed control scheme. Furthermore, there is no evidence that the spillway or any other part of the equalization basin system has erosion channels.

ATTACHMENT A

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Worksheet 2: Runoff curve number and runoff

Project Hometown IWDS (T. Sall) SC091-001 By KDT Date 6/29/87

Location Hometown, PA (Schuylkill Cty.) Checked SRG Date 7/14/87

Circle one: (Present) Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☒ acres ☐ mi² ☐ %	Product of CN x area
A*	Plastic Fluff Pile	77			4.60	354.20
Meeksville Channery Loam (FAIR, C)	Woods	73			2.60	189.80
Impervious A	Lagoon.	98			0.36	35.28
1/ Use only one CN source per line.				Totals =	7.56	579.28

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{579.28}{7.56} = 76.6$ Use CN = 76.6 (interpolate)

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... yr	10		
Rainfall, P (24-hour) ..... in	4.7		
Runoff, Q ..... in (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	2.34		

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ATTACHMENT B

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TODD GIDDINGS and ASSOCIATES
CONSULTING HYDROGEOLOGISTS

140 West Fairmount Avenue — State College, Pa. 16801 — Phone (814) 238-5927

April 9, 1984

Paul Koval, Operations Chief
Bureau of Water Quality Management
Department of Environmental Resources
90 E. Union Street, 2nd Floor
Wilkes-Barre, PA 18701

Re: Theodore Sall Inc., Rush Township, Schuylkill County, PA
NPDES Permit No. PA 0070327

Dear Mr. Koval:

This letter will serve as confirmation to our phone conversation of April 5, 1984 when, at the company's request and on their behalf, I reported to you a minor bypass of the wastewater treatment facilities at the above-referenced location.

On April 5, 1984, I received a telephone call from the operator of the treatment works reporting that his daily inspection of the site revealed a small bypass occuring from the spillway of the equalization lagoon. This bypass was the result of the recent 12-inch snowpack melt on the site plus an ongoing rainfall that deposited approximately 2.5 inches over a 36-hour period. The operator reported the discharge on the spillway was approximately 2 feet in width and one-half inch deep. In order to minimize the bypass, I instructed the operator to open the flow control valve to allow the maximum flow (60 GPM) to be discharged to the wastewater treatment plant.

A follow-up call to the operator on April 6, 1984 indicated that the bypass discharge (as of approximately 10:30 A.M.) had been reduced by one-half of its original volume and continued to decrease during the day as the weather improved.

(Reg)

Per your request, Joseph Davis, Chief, Pennsylvania Section, Water Permits Branch, Water Management Division, U.S. EPA Division III, was notified of this bypass at approximately 1:30 P.M. on April 5, 1984.

If you have any questions concerning this matter, please contact me at your convenience.

Sincerely,

TODD GIDDINGS and ASSOCIATES, INC.

Kerry D. Tyson, P.E.

KDT/rlt

cc: B. Stonelake, Esq.
L. Paradoski
J. Koin
J. Davis